

# **SYSTEM AND METHOD FOR AUTOMATIC SELECTION OF SERVICE PROVIDER FOR EFFICIENT USE OF BANDWIDTH AND RESOURCES IN A PEER-TO-PEER NETWORK ENVIRONMENT**

## **ABSTRACT OF THE DISCLOSURE**

5 A system and method for distributed function discovery with third party responses  
in a peer-to-peer network to facilitate efficient use of bandwidth and resources are  
disclosed. The method for secure automatic selection of a designated service provider in  
a peer-to-peer network generally comprises broadcasting a digitally signed election  
10 initiating packet containing a value for at least one criteria by a sending node, awaiting  
response time-out period expiry or receipt of a response election packet, broadcasting a  
digitally signed election result packet indicating the sending node is the designated  
service provider if response time-out period expiry occurs prior to receipt of a response  
election packet, and awaiting for, verifying, and storing election result in an election  
15 result broadcast if receipt of a response election packet occurs prior to expiry of response  
time-out period. The election result broadcast may contain a value for the at least one  
criteria such that verifying the election result includes verifying that the value for at least  
one criteria in the response election packet wins over the value for at least one criteria in  
the initiating election packet. The criteria may be, for example, node name, MAC (media  
20 access control) address, Internet access, bandwidth, operating system, and processor  
speed.